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Steven M. Hoffberg, Esq.
MILDE, HOFFBERG & MACKLIN, LLP
Suite 460
10 Bank Street
White Plains, NY 10606

EXAMINER	
DARROW, JUSTIN T	

ART UNIT	PAPER NUMBER
2132	5

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/577,961	Applicant(s) DURST ET AL.	
	Examiner Justin T. Darrow	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 May 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-30 have been examined.

Response to Preliminary Amendment

2. The preliminary amendments filed 05/24/2000 have not been entered because they are inconsistent: one amendment cancels claims 1-13 and 18-21 with claims 14-17 and 22-28 remaining pending; the other cancels claims 14-17 and 22-28 with claims 1-13, 18-21, and 29-30 remaining pending.

Drawings

3. The informal drawings filed in this application are acceptable for examination purposes. Formal drawings must be made in reply to this Office action. See 37 CFR 1.85(a).

Specification

4. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

5. The attempt to incorporate subject matter into this application by reference to the documents cited in:

page 29, lines 6-14;

page 30, lines 16-26;

page 33, lines 10-12; and

page 34, lines 4-13

is improper because the public cannot readily retrieve these references.

Claim Objections

6. Claim 8 is objected to because of the following informalities: insert after "portions" in page 73, line 3, --of--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "sparse" in claim 6, page 72, line 26 is a relative term which renders the claim indefinite. The term "sparse" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The distribution of recording medium on the

carrier is rendered indefinite by use of the term sparse (see specification; page 60, lines 4-5; page 69, lines 3-6; and figure 9, items 67 and 83).

9. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "essentially" in claim 21, page 75, line 1 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The unique code printed on the graphic bearing surface is rendered indefinite by use of the term sparse (see specification; page 69, lines 4-5 and figure 9, item 85). This rejection can be overcome by deleting " essentially " in claim 21, page 75, line 1.

Double Patenting

10. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

11. Claims 1-30 are provisionally rejected under 35 U.S.C. 101 as claiming the identical invention as that of claims 1-30 of copending Application No. 09/577,959. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

13. Claims 1-3, 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Latent Image Technology Ltd. (Karassev et al.), International Application Publication No. WO 99/21035 A1.

As per claim 1, Karassev et al. illustrate a recording apparatus comprising:

(a) a recording medium, having anisotropic optical domains (see page 9, lines 1-3; locally modified structures in polymer films forming Stable Latent Images (SLI) invisible in natural light and visible in polarized light); and

(b) means for transferring a portion of the recording medium to a carrier [see specification, page 67, lines 15-16; figure 4, items 31, 32a, 32b and 37; take-up reel for winding ribbon used for printing] (see page 16, lines 1-6; figure 5, items 30, 10a, and 10b; a device for superimposing two stable latent images (SLI) with anisotropy axes oriented at about 45 degrees to each other),

where a bulk portion of the recording medium has macroscopically detectable anisotropic optical properties (see page 16, lines 5-6, the images can be switched by rotation of a polarizer).

The "means for transferring" limitation explicitly recited in claim 1 is construed to cover the corresponding structure described in the specification and the equivalents thereof. See MPEP § 2181, 35 U.S.C. § 112, ¶ 6, and *In re Donaldson Co.*, 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (en banc).

As per claim 2, Karassev et al. further describe:

a polymer having anisotropic crystalline properties (see page 10, lines 8-13; figures 1-7, items 12 and 14; image regions structurally comprise a polymer with anisotropic crystallinity).

As per claim 3, Karassev et al. additionally elaborate:

at least two recording media are provided, each having distinct anisotropic properties (page 10, lines 8-13; figures 1-7, items 12 and 14; image regions 12 differ from background areas 14 in preferred direction of anisotropy),

where the transferring means selects from available recording media to control an anisotropic recording pattern (see page 10, lines 5-7; figures 1-4; items 10, 12, and 14; selective rotation of transmitted light within either or both of the image and background regions with anisotropy depends on the structure of the polymer and the depth of the image).

As per claim 6, Karassev et al. moreover point out:

a sparse distribution of recording medium on the carrier (see page 14, lines 9-13; figure 8, items 40 and 42; a small portion of film over a document carrier).

As per claim 8, Karassev et al. depict a recording medium comprising:

(a) a polymer film having adhered a transfer layer having a predefined anisotropic optical property (see page 9, lines 1-3; locally modified structures in polymer films forming Stable Latent Images (SLI) invisible in natural light and visible in polarized light),

adapted to selectively transfer portions of the layer to a recording medium under the influence of a print head (see page 10, lines 5-7; figures 1-4; items 10, 12, and 14; selective rotation of transmitted light within either or both of the image and background regions with anisotropy depends on the structure of the polymer and the depth of the image; impregnating the photostable polymer with activator agent analogous to a print head).

As per claim 9, Karassev et al. show a recording method comprising:

(a) providing a recording medium, having anisotropic optical domains (see page 9, lines 1-3; locally modified structures in polymer films forming Stable Latent Images (SLI) invisible in natural light and visible in polarized light); and

(b) transferring a portion of the recording medium to a carrier (see page 16, lines 1-6; figure 5, items 30, 10a, and 10b; a device for superimposing two stable latent images (SLI) with anisotropy axes oriented at about 45 degrees to each other),

where a bulk portion of the recording medium has macroscopically detectable anisotropic optical properties (see page 16, lines 5-6, the images can be switched by rotation of a polarizer).

14. Claims 1-30 are rejected under 35 U.S.C. 102(e) as being anticipate by Kaish et al., U.S. Patent No. 5,974,150 A.

As per claim 1, Kaish et al. describe a recording apparatus comprising:

(a) a recording medium, having anisotropic optical domains (see column 21, lines 48-51; a fluorescent dye or pigment doped into a fiber polymer matrix having a long major axis to align with the polymer chains of fiber during the drawing process; see column 21, lines 25-30; where fibers are sued as the indicators and luminescent dye is used as the marking material to assure maximal dichroism); and

(b) means for transferring a portion of the recording medium to a carrier [see specification, page 67, lines 15-16; figure 4, items 31, 32a, 32b and 37; take-up reel for winding

ribbon used for printing] (see column 22, lines 11-15; incorporating the marking materials in a laminating manufacturing apparatus analogous to printing),

where a bulk portion of the recording medium has macroscopically detectable anisotropic optical properties (column 21, lines 31-34; a resulting fiber/marking dye combination to achieve satisfactory dichroism).

The "means for transferring" limitation explicitly recited in claim 1 is construed to cover the corresponding structure described in the specification and the equivalents thereof. See MPEP § 2181, 35 U.S.C. § 112, ¶ 6, and *In re Donaldson Co.*, 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) *en banc*.

As per claim 2, Kaish et al. further mention:

the polymer having crystalline anisotropic properties (see column 21, lines 31-34; fiber/marking dye combination achieving satisfactory dichroism; see column 21, lines 48-51; where the fluorescent dye or pigment doped into the fiber polymer matrix having a long major axis aligned with the polymer crystalline chains).

As per claim 3, Kaish et al. additionally point out:

that at least two recording media are provided, each having anisotropic properties (see column 21, lines 21-31; fiber and marking dyes with dichroism; see column 22, lines 1-4; after appropriate fiber polymer matrix and dye materials have been selected, the materials are combined),

where the transferring means selects from available recording media to control an anisotropic recording pattern (see column 22, lines 11-15; the marking materials may be laminated or sprayed as aerosol marking sprays).

As per claim 4, Kaish et al. moreover discuss:

that the recording medium is transferred in a pattern defined by a cipher (see column 22, lines 38-42; figure 1, items 2, 4, 8, 9, and 10; an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

As per claim 5, Kaish et al. further point out:

that a message is encoded on the carrier comprising a self-authenticating description of the pattern (see column 22, lines 31-42; figure 1, items 1, 2, 4, 8, 9, and 10; the authentication certificate including an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

As per claim 6, Kaish et al. then describe:

that the pattern comprises a sparse distribution of recording medium on the carrier (see column 22, lines 27-31; figure 1, items 1 and 3; dichroic fibers embedded in an authentication certificate in a random and visibly sparse manner).

As per claim 7, Kaish et al. next specify:

that the recording medium comprises a fluorescent dye composition (see column 22, lines 48-53; fluorescent dye or pigment doped into the fiber polymer matrix, having a long major axis to align with the polymer chains of fiber during the drawing process).

As per claim 8, Kaish et al. mention a recording medium comprising:

a polymer film having adhered to it a transfer layer having a predefined anisotropic optical property (see column 21, lines 31-34; fiber and marking dye combination with dichroism; see column 22, lines 23-26; the pattern of fibers match and encoded or stored predefined pattern)

adapted to selectively transfer portions of the layer to a recording medium under influence of a print head (see column 21, lines 21-31; fiber and marking dye combination with dichroism; see column 22, lines 1-4; after appropriate fiber polymer matrix and dye materials have been selected, the materials are combined; see column 22, lines 11-15; the marking materials may be laminated).

As per claim 9, Kaish et al. describe a recording method comprising:

(a) providing a recording medium, having anisotropic optical domains (see column 21, lines 48-51; a fluorescent dye or pigment doped into a fiber polymer matrix having a long major axis to align with the polymer chains of fiber during the drawing process; see column 21, lines 25-30; where fibers are sued as the indicators and luminescent dye is used as the marking material to assure maximal dichroism); and

(b) transferring a portion of the recording medium to a carrier [see specification, page 67, lines 15-16; figure 4, items 31, 32a, 32b and 37; take-up reel for winding ribbon used for

printing] (see column 22, lines 11-15; incorporating the marking materials in a laminating manufacturing apparatus analogous to printing),

where a bulk portion of the recording medium has macroscopically detectable anisotropic optical properties (column 21, lines 31-34; a resulting fiber/marking dye combination to achieve satisfactory dichroism).

As per claim 10, Kaish et al. further illustrate:

accounting for transferring an anisotropic medium to carrier in an accounting database (see column 26, lines 5-10; figure 3, item 55; an accounting system to verify counterfeit tag readings; see column 22, lines 27-46; figure 1, item 3; where the counterfeit tag has a pattern random pattern of dichroic fibers).

As per claim 11, Kaish et al. additionally point out:

(a) defining a pattern of recording media on the carrier (see column 22, lines 28-31; figure 1, items 3 and 6; an authentication certificate having embedded during a manufacturing process dichroic fibers on a random basis)

(b) authenticating the carrier based on a correspondence of a subsequently detected pattern to the defined pattern (see column 26, lines 36-43; figure 4B, steps 113, 114, 115, and 116; reading the pattern of dichroic fibers on the label, reading an encrypted message on the label, comparing the detected dichroic pattern with the encoded message, and determine the authentication) and

(c) accounting for the authenticating step in an accounting database (see column 26, lines 5-10; figure 3, item 55; an accounting system to monitor the counterfeit tag readings).

As per claims 12, Kaish et al. illustrate an imprinted carrier, produced by a method comprising the steps of:

(a) providing a recording medium, having anisotropic optical domains (see column 21, lines 48-51; a fluorescent dye or pigment doped into a fiber polymer matrix having a long major axis to align with the polymer chains of fiber during the drawing process; see column 21, lines 25-30; where fibers are sued as the indicators and luminescent dye is used as the marking material to assure maximal dichroism); and

(b) transferring a portion of the recording medium to a carrier [see specification, page 67, lines 15-16; figure 4, items 31, 32a, 32b and 37; take-up reel for winding ribbon used for printing] (see column 22, lines 11-15; incorporating the marking materials in a laminating manufacturing apparatus analogous to printing),

where a bulk portion of the recording medium has macroscopically detectable anisotropic optical properties (column 21, lines 31-34; a resulting fiber/marking dye combination to achieve satisfactory dichroism).

Claims 12 and 13 are product-by-process claims such that the patentability of the product, i.e. the imprinted carrier, does not depend on its claimed method of production. See MPEP § 2113 and *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

As per claim 13, Kaish et al. further point out:

that the carrier is associated with an object, (see column 22, lines 27-28; figure 1; the authentication certificate is provided as a product label)

where a message identifying the object is imprinted on the carrier (see column 22, lines 31-38; figure 1, item 6; the authentication certificate includes product identification).

As per claim 14, Kaish et al. show an authentication device comprising:

(a) an illumination source having a narrowband output adapted for exciting fluorescence (see column 23, lines 27-30; figure 2, items 39 and 40; radiation from a flashlamp at the absorption maxima of the dyes is focused on the label);

(b) a time-varying polarizer (see column 23, lines 35-40; figure 2, items 37 and 40; a moving or rotating polarizer to allow resolution of the axis of polarization);

(c) an optical filter to exclude the narrowband output (see column 23, lines 30-35; figure 2, item 41; fluorescent radiation emitted by fibers isolated by a band pass filter at the fluorescent wavelength blocking the narrowband flashlamp output);

(d) an optical imaging sensor (see column 23, lines 30-35; figure 2, items 35 and 36; fluorescent radiation emitted by fibers imaged by a CCD imager system); and

(e) a processor for performing a digital background subtraction under a plurality of polarizer conditions, for extracting dichroic elements sensed by the optical imaging sensor (see column 25, lines 7-11; figure 2, items 20, 35, and 36; a microcomputer receiving the signal from the CCD sensors and processing them; column 23, lines 61-67; column 24; lines 1-5; subtracting the background value to represent measurements of variations in dichroism from the detected signal), and

for authenticating a medium based on a correspondence of a sensed dichroic element pattern and a predetermined dichroic element pattern (see column 26, lines 36-43; figure 4B, steps 113, 114, 115, and 116; from the read dichroic fibers on the label, the system compares the detected dichroic pattern with the encoded message read from the label to determine authentication and its reliability).

As per claim 15, Kaish et al. further elaborate:

that the illumination source comprises a broadband light source in series with a narrowband optical filter (see column 23, lines 27-35; figure 2, items 39 and 41; a light emitting diode followed by a band pass filter);

As per claim 16, Kaish et al. additionally point out:

that the time-varying polarizer is a rotating linear polarizer (see column 23, lines 35-40; figure 2, item 37; a rotating polarizer).

As per claim 17, Kaish et al. then show:

that the optical filter comprises a broadband bandpass filter (see column 23, lines 30-35; figure 2, item 41; a band pass filter at the broad fluorescent wavelength of the dyes).

As per claim 18, Kaish et al. delineate an optical read only data storage medium comprising:

an optically transparent substrate and a data pattern molded on a surface of it (see column 22, lines 11-15; marking materials incorporated into transparent plastic products),

having a set of random defects (see column 22, lines 27-31; figure 1, item 3; embedded dichroic fibers on a random basis), and

a recorded set of defect identifications associated with it (see column 22, lines 38-42; figure 1, items 3, 4, and 8-10; an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

As per claim 19, Kaish et al. further elaborate:

that the recorded set of defect identifications are imprinted as a serial data code on a surface of the medium (see column 22, lines 38-42; figure 1, items 3, 4, and 8-10; an MICR (magnetic-ink character recognition) text, two-dimensional bar code and a glyph pattern including an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

As per claim 20, Kaish et al. additionally show:

that the recorded set of defect identifications are formed as a pattern on a surface of the medium in a common plane with the molded data pattern (see column 22, lines 27-46; figure 1, items 3, 4, and 8-10; the encrypted message is on the same surface of the authentication certificate as the dichroic fibers).

As per claim 21, Kaish et al. describes a data storage disk comprising:

a graphic-bearing surface (see column 22, lines 11-15; marking materials laminated onto a plastic surface),

a unique code printed on the graphic bearing surface (see column 22, lines 27-31; figure 1, item 3; embedded dichroic fibers on a random basis, resulting in a unique pattern), and

an ascertainable non-deterministic pattern on the disk (see column 22, lines 38-42; figure 1, items 3, 4, and 8-10; an encrypted message defining a spatial relation between the dichroic fibers and a reference position),

where the printed code provides self-authentication for the disk based on the ascertainable non-deterministic pattern (see column 26, lines 36-43; figure 4B, steps 113, 114, 115, and 116; from the read dichroic fibers on the label, the system compares the detected dichroic pattern with the encoded message read from the label to determine authentication and its reliability).

As per claim 22, Kaish et al. illustrate an encoded optical disk reader, comprising:

(a) an optical sensor for reading authentication data on the disk (see column 25, lines 44-53; figure 3, items 43 and 44; the characteristic pattern on the object is read by a scanner);

(b) a non-deterministic characteristic analyzer (see column 25, lines 56-67; column 26, lines 1-2; figure 3, item 45; a microcomputer to compare the read dichroic pattern with the decrypted encrypted message); and

(c) an authenticator, authenticating the disk based on an output of the non-deterministic characteristic analyzer and the authentication data (see column 26, lines 36-43; figure 4B, steps 113, 114, 115, and 116; from the read dichroic fibers on the label, the system compares the

detected dichroic pattern with the encoded message read from the label to determine authentication and its reliability).

As per claim 23, Kaish et al. further disclose:

that the optical sensor reads an optical encoding of the disk and the non-deterministic characteristic (see column 25, lines 44-53; figure 3, items 43 and 44; the characteristics of the label and the object are read by a scanner).

As per claim 24, Kaish et al. then show:

that the optical sensor is distinct from an optical sensor which reads an optical encoding of the disk (see column 22, lines 31-38; figure 1, items 3 and 9; a bar code reader and an optical scanner for reading the encrypted message and fiber pattern, respectively).

As per claim 25, Kaish et al. subsequently depict:

that the non-deterministic characteristic comprises a random reading defect of the disk (see column 22, lines 27-31; figure 1, item 3; embedded dichroic fibers on a random basis).

As per claim 26, Kaish et al. additionally suggest:

that the non-deterministic characteristic comprises a dye pattern on the disk (see column 21, lines 35-38; fluorescent dyes are utilized in the marking material).

As per claim 27, Kaish et al. next describe:

that the non-deterministic characteristic comprises a random distribution of fibers disposed on the disk (see column 22, lines 27-31; figure 1, item 3; embedded dichroic fibers on a random basis).

As per claim 28, Kaish et al. also point out:

that the optical sensor reads a self-authentication code from the disk (see column 25, lines 44-53; figure 3, items 43 and 44; the characteristics of the object are read by a scanner).

As per claim 29, Kaish et al. describe an authenticating sealing tape (see column 22, lines 27-28; figure 1, item 1; an authentication certificate as a product label) comprising:

a tamper indicator (see column 26, lines 10-14; figure 3, item 44; providing an indication of a misread or damaged label, or counterfeit label to trigger an alarm),

a periodic unique identification of a portion of the tape (column 22, lines 31-43; figure 1, items 8-10; a periodic MICR text, bar code, or glyph pattern), and

an ascertainable non-deterministic characteristic of the tape in proximity to the periodic unique identification portion (see column 22, lines 28-31; figure 1, items 3 and 4; an embedded fiber dichroic pattern next to the a periodic MICR text, bar code, or glyph pattern).

As per claim 30, Kaish et al. then describe:

that the ascertainable non-deterministic characteristic is a pattern selected from a random dye pattern (see column 21, lines 35-38; fluorescent dyes are utilized in the marking material)

and a random fiber pattern (see column 22, lines 27-31; figure 1, item 3; embedded dichroic fibers on a random basis).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Latent Image Technology Ltd. (Karassev et al.), International Application Publication No. WO 99/21035 A1 as applied to claim 1 above, and further in view of Kaish et al., U.S. Patent No. 5,974,150 A.

As per claim 4, Karassev et al. disclose the recording apparatus of claim 1. However, they do not explicitly teach a pattern defined by a cipher.

Kaish et al. discuss:

that the recording medium is transferred in a pattern defined by a cipher (see column 22, lines 38-42; figure 1, items 2, 4, 8, 9, and 10; an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to combine the recording apparatus of Karassev et al. with the

cipher defined pattern of Kaish et al. to thwart attempts of a counterfeiter to duplicate the label by a printing process (see column 22, lines 47-57).

As per claim 5, Kaish et al. further point out:

that a message is encoded on the carrier comprising a self-authenticating description of the pattern (see column 22, lines 31-42; figure 1, items 1, 2, 4, 8, 9, and 10; the authentication certificate including an encrypted message defining a spatial relation between the dichroic fibers and a reference position).

Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to combine the recording apparatus of Karassev et al. with the cipher defined pattern of Kaish et al. to thwart attempts of a counterfeiter to duplicate the label by a printing process (see column 22, lines 47-57).

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Latent Image Technology Ltd. (Karassev et al.), International Application Publication No. WO 99/21035 A1 as applied to claim 1 above, and further in view of Rolic AG (Schadt et al.), International Application Publication No. WO 98/52077 A1.

Karassev et al. disclose the recording apparatus of claim 1. Although they describe an anisotropic polymer (see page 10, lines 5-13; figures 1-7, items 12 and 14), they do not explicitly teach a fluorescent dye composition.

Schadt et al. describe:

a recording medium comprising a fluorescent dye composition (see page 12, lines 15-26; an authentication element containing orientable fluorescent dyes).

Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to combine the recording apparatus of Karassev et al. with the fluorescent dye composition of Schadt et al. to see information stored in the authentication element with polarized light that would be invisible with unpolarized light (see page 12, lines 27-32).

18. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Latent Image Technology Ltd. (Karassev et al.), International Application Publication No. WO 99/21035 A1 as applied to claim 9 above, and further in view of Kaish et al., U.S. Patent No. 5,974,150 A.

As per claim 10, Karassev et al. disclose the recording method of claim 9. However, they do not explicitly teach accounting.

Kaish et al. illustrate:

accounting for transferring an anisotropic medium to carrier in an accounting database (see column 26, lines 5-10; figure 3, item 55; an accounting system to verify counterfeit tag readings; see column 22, lines 27-46; figure 1, item 3; where the counterfeit tag has a pattern random pattern of dichroic fibers).

Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to combine the recording method of Karassev et al. with the

accounting database of Kaish et al. to indicate the status of the device to which the tag is attached to as to whether the label is authentic, counterfeit, or misread (see column 26, lines 10-14).

As per claim 11, Kaish et al. further point out:

(a) defining a pattern of recording media on the carrier (see column 22, lines 28-31; figure 1, items 3 and 6; an authentication certificate having embedded during a manufacturing process dichroic fibers on a random basis)

(b) authenticating the carrier based on a correspondence of a subsequently detected pattern to the defined pattern (see column 26, lines 36-43; figure 4B, steps 113, 114, 115, and 116; reading the pattern of dichroic fibers on the label, reading an encrypted message on the label, comparing the detected dichroic pattern with the encoded message, and determine the authentication) and

(c) accounting for the authenticating step in an accounting database (see column 26, lines 5-10; figure 3, item 55; an accounting system to monitor the counterfeit tag readings).

Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to combine the recording method of Karassev et al. with the authenticating of Kaish et al. to prevent use of the authentication device to generate counterfeit labels or otherwise defeat the security provided (see column 26, lines 43-46).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Rolic AG (Schadt et al.), International Application Publication No. WO 99/53349 A1 discloses an optical identification element comprising a liquid crystal polymer

Telephone Inquiry Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin T. Darrow whose telephone number is (703) 305-3872 and whose electronic mail address is justin.darrow@uspto.gov. The examiner can normally be reached Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barrón, Jr., can be reached at (703) 305-1830.

The fax number for Formal or Official faxes to Technology Center 2100 is (703) 872-9306. In order for a formal paper transmitted by fax to be entered into the application file, the paper and/or fax cover sheet must be signed by a representative for the applicant. Faxed formal papers for application file entry, such as amendments adding claims, extensions of time, and statutory disclaimers for which fees must be charged before entry, must be transmitted with an authorization to charge a deposit account to cover such fees. It is also recommended that the cover sheet for the fax of a formal paper have printed "**OFFICIAL FAX**". Formal papers transmitted by fax usually require three business days for entry into the application file and consideration by the examiner. Formal or Official faxes including amendments after final rejection (37 CFR 1.116) should be submitted to (703) 872-9306 for expedited entry into the application file. It is further recommended that the cover sheet for the fax containing an

amendment after final rejection have printed not only "**OFFICIAL FAX**" but also "**AMENDMENT AFTER FINAL**".

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

June 24, 2004

Justin Darrow

JUSTIN T. DARROW
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100